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TRAINING PROGRAM FOR THE ANALYSIS OF DNA DATA BANK SAMPLES USING PCR-BASED STR FLUORESCENCE IMAGING ANALYSIS AT THE POWERPLEX® 16 BIO LOCI	Issue No. 1
	Effective Date: 1-August-2003
<p>1 OVERVIEW OF TRAINING PROGRAM</p> <p>1.1 PURPOSE AND SCOPE</p> <p>1.1.1 The purpose of this document is to provide a uniform training program for the analysis of DNA Data Bank samples using PCR-based STR fluorescence imaging analysis, and in so doing, to adhere to the “FBI Quality Assurance Standards for Convicted Offender DNA Databanking Laboratories” (April 1999).</p> <p>1.1.2 The program will provide exposure to methods, techniques and procedures presently used and accepted by the courts, forensic DNA examiners, and DNA Data Bank analysts. Additionally, it will provide for exposure to the pertinent literature available in the field. The training will focus on the methods currently used in the Virginia Division of Forensic Science to allow for proficiency to be developed using known blood samples. Assistance in developing the skills necessary for a comprehensive understanding of both the PCR process and STR fluorescence imaging analysis will be provided during the training.</p> <p>1.1.3 The sequence in which the tasks are presented in the outline should not necessarily be considered as a mandatory order of instruction. Oral and practical examinations may be staged periodically. The training will culminate with a formal practical competency examination to ascertain the trainee’s skills and abilities and an oral examination to ascertain the trainee’s technical knowledge. Satisfactory performance in both areas is required prior to qualification as a DNA Data Bank analyst.</p> <p>1.2 COORDINATION OF THE PROGRAM</p> <p>The training coordinator will be a DNA Data Bank analyst or forensic DNA examiner experienced in the use of DNA PCR-based STR fluorescence imaging analysis. Usually the individual’s supervisor serves as the training coordinator. The coordinator may delegate certain duties and blocks of instruction to other qualified analysts, but will be responsible for the overall training.</p> <p>1.3 TRAINING PERIOD</p> <p>It is estimated that this training program can be completed in four to six months, which includes successful completion of the final oral and competency examinations. Some individuals may require more or less time than others to complete the training, depending on such factors as experience and education. The length of the training period is a matter which will be left to the discretion of the Program Manager of the Forensic Biology Section in consultation with the Section Chief, the trainee’s supervisor, and the training coordinator when applicable.</p> <p>1.4 GUIDELINES FOR FINAL ORAL EXAMINATION</p> <p>1.4.1 An informal oral examination of the trainee will be conducted by the DNA Data Bank Supervisor, Section Chief, and the Laboratory Director or designee to ascertain the technical knowledge of the individual. This will be limited to two (2) hours. Questions will be confined to technical aspects of the training and will be used to ascertain whether the goals, as set forth in each technical portion of the training program, have been achieved.</p>	

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<p>1.4.2 Immediately following the oral examination the trainee may be released while the DNA Data Bank Supervisor, Section Chief, and the Laboratory Director or designee evaluate the trainee's performance.</p> <p>1.4.3 The outcome of the oral examination evaluation will be</p> <p>1.4.3.1 Satisfactory</p> <p>1.4.3.2 Not satisfactory</p> <p>1.4.3.2.1 If the panel determines that the trainee's performance was not satisfactory, steps must be taken to effect the appropriate action.</p> <p>1.4.4 Satisfactory performance on <u>both</u> practical and technical aspects must be achieved before the individual is qualified to perform the duties of a DNA Data Bank analyst.</p> <p>1.5 INSTRUCTIONS FOR THE TRAINING COORDINATOR</p> <p>1.5.1 The intent of the training program is to ensure that each and every trainee is provided with certain basic principles and fundamentals necessary for the complete education of a DNA Data Bank analyst. All of the listed topics must be incorporated into the program. Some of the topics will suggest an order of events and this ranking should be followed. Any deviation from the contents of this protocol must be cleared with the Section Chief <u>and</u> Program Manager of the Forensic Biology Section.</p> <p>1.5.2 The training coordinator or designated DNA Data Bank analyst will document the completion of each required training task by the trainee on the designated checklist for that aspect of training. The checklist for each training topic is located at the end of each section in this training manual.</p> <p>1.5.3 The completed checklist will be retained by the trainee in the appropriate sections of his/her training notebook.</p> <p>1.5.4 One copy of all completed checklist will accompany the Training Coordinator's final report to the Section Chief and Program Manager stating that all aspects of the training program have been completed satisfactorily.</p> <p>1.5.5 The trainee will be evaluated on his/her performance during the course of the program. The training coordinator must submit monthly written evaluations of the trainee's progress to the Section Chief and Program Manager of the Forensic Biology Section. The monthly training report is due on each trainee within five working days of the end of the month.</p> <p>1.5.6 The monthly training report must include:</p> <p>1.5.6.1 A summation of the progress made during the month</p> <p>1.5.6.2 An evaluation of the trainee's notebook</p> <p>1.5.6.3 An evaluation of the progress during the month, to include:</p>	

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<div data-bbox="532 260 1500 296">1.5.6.3.1 Problem areas, as applicable, and their solutions or proposed solutions</div> <div data-bbox="532 327 943 363">1.5.6.3.2 Trainee's strong points</div> <div data-bbox="532 394 1216 430">1.5.6.3.3 Trainee's weak points and suggested remedies</div> <div data-bbox="532 462 1278 497">1.5.6.3.4 Statement concerning trainee's overall performance</div> <div data-bbox="532 529 1032 564">1.5.6.3.5 Plans for the upcoming month</div> <div data-bbox="342 596 1549 730">1.5.7 This report will be in memorandum format, one memorandum per trainee. Each memorandum will become a part of the training history of the trainee and will be used to document the trainee's progress toward qualification. The format for the monthly report is located at the end of this section.</div> <div data-bbox="342 762 1516 966">1.5.8 A review of the checklist with the trainee at the end of each month will enhance the training coordinator's ability to prepare the month written evaluation and may also give the trainee a greater sense of accomplishment. The coordinator is to discuss the monthly evaluation with the trainee prior to forwarding it to the Section Chief and Program Manager of the Forensic Biology Section. Any comments by either the trainee or coordinator are to be included with the report.</div> <div data-bbox="342 997 1516 1167">1.5.9 When the trainee has satisfactorily completed all of the requirements of the program, a letter will be issued by the Program Manager of the Forensic Biology Section to the Central Laboratory Director stating that the person is qualified to perform the duties of a DNA Data Bank analyst. If the trainee cannot meet the criteria expected of him/her during the period allowed for training, steps will be taken to effect appropriate action.</div> <div data-bbox="342 1199 1222 1234">1.5.10 The training should culminate so that the trainee has the following:</div> <div data-bbox="436 1266 1510 1335">1.5.10.1 Knowledge of the principles and practices of forensic DNA PCR technology as these relate to the analysis of DNA Data Bank samples.</div> <div data-bbox="436 1367 1469 1436">1.5.10.2 Knowledge of the theory and application of instrumentation and specialized techniques used to analyze DNA Data Bank samples.</div> <div data-bbox="436 1467 1526 1570">1.5.10.3 The ability to perform accurate DNA analyses independently and proficiently, to accurately document the results of all analyses in accordance with the Division and Section policies and procedures.</div> <div data-bbox="246 1635 815 1671">1.6 INSTRUCTIONS FOR THE TRAINEE</div> <div data-bbox="342 1703 1533 1906">1.6.1 The trainee is expected to keep a loose-leaf notebook on all work completed. The completed checklist for each training topic and the training coordinator's monthly report will also be included in the notebook. The notebook will be checked monthly by the training coordinator. The notebook will include photographs of all yield and product gels, copies of all original typing gel scans and gray scale/color-corrected images, copies of allele designation generated by the STaRCall software program (including a copy of the landscape printout), work sheets</div>	

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<p>used for each group of samples, comments on problems that arose and how the problems were corrected, etc.</p> <p>1.6.2 The DNA PCR-based STR fluorescence imaging analysis and Quality Control procedures can be found in the <u>Commonwealth of Virginia Division of Forensic Science Forensic Biology Section Manual - Fluorescent Detection PCR-Based STR DNA Protocol:Powerplex® 1.1, 2.1 And 16 Bio Systems, Section III, Forensic Biology Section QIAGEN® BioRobot™ 9604 Procedure Manual, Section V, and The Quality Assurance Program DNA Typing Of Biological Materials, Section VI</u>, along with an overview of the procedures, glossary of terms, and reagent protocols.</p> <p>1.6.3 All readings associated with the training are included in the Bibliography, Appendix A of this manual. The readings cover the material needed for an adequate understanding of the subject matter and ARE REQUIRED.</p> <p>1.6.4 A list of study questions is located at the end of each section in this manual. The trainee is encouraged to write out the answers to the questions <u>after</u> completing the required tasks and readings for the section.</p> <p>1.6.5 The training program provides the trainee with exposure to blood stains and buccal samples. Each group of samples can be worked simultaneously, although they may be at different stages of the procedure.</p> <p>1.6.6 The trainee will assist with DNA Data Bank throughout the training, <u>only under the direct supervision</u> of a qualified DNA Data Bank analyst.</p>	

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MONTHLY TRAINING REPORT FORMAT

(on letterhead stationary)

MEMORANDUM

TO: (Name), Section Chief and Program Manager of the Forensic Biology Section

THROUGH: (Name), Supervisor [if applicable]

FROM: (Name), Training Coordinator

DATE:

SUBJECT: Training Report: (Name)

This report reviews and evaluates the DNA Data Bank PCR-Based training of (Name) for the month of _____.

1. Progress during the month
2. Evaluation of trainee's notebook
3. Evaluation of progress
4. Plans for the upcoming month

cc: (Trainee)
 (Supervisor, if different than the Training Coordinator)

◆END